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SOME NOTES ON THE COLLECTION OF SHELLS IN THE MUSEUMS OF
PARIS, BERLIN AND AMSTERDAM.

BY C. W. JOHNSON.

The collection of shells in the Museum of Zoology, Jardin des Plantes, Paris, is one often referred to as being the only collection in which you can see the recent and fossil species side by side. One, therefore, naturally imagines what such a collection *should be*, and, as usual under such circumstances, one is somewhat disappointed. The collection is distributed as follows: Around the entire outer portion or railing of the first gallery, in a case about two feet in width, are arranged the Pelecypoda, while on the second gallery around the entire wall, in a wide, slanting case or shelf (with corals above and a series of eight drawers beneath) are arranged the Gastropoda. This necessarily scatters the collection to a great extent, and makes it very inconvenient. A collection of the recent and fossil species arranged together is very interesting and instructive, but it should be a special collection of such forms as can be readily traced back through geological time, and which anyone would consider to be the prototypes of the recent species; in other words, the primary object of such a collection should be to show the evolution of species and genera. The study of recent and fossil mollusca is now divided into well-defined specialties; no one person can cover with success more than a few closely related groups, faunæ or formations; so it seems to us that a large collection should be arranged accordingly. The paleontologist must be a geologist, also;

he cannot ignore stratigraphy; therefore, the collection most convenient to him is one arranged geologically; again, he is making a special study of the tertiary mollusca, and has, for instance, a collection of Paris Basin fossils, he would not want to travel two or three hundred linear feet, on two or three different galleries to determine his material. Neither would the collector of recent shells want to delve among the overwhelming mass of fossils to name his collection. I think that we can therefore lay aside this plan (which is advocated by many) as being entirely inconsistent with our present system of investigation. The specimens in the Museum are mounted on tablets, the recent on white and the fossil on yellow, the label being pasted on the lower edge of the tablet.

The collection of mollusca in the Museum of Natural History of Berlin, presents many features of interest. It occupies one-half of a large room, that is divided into small alcoves by tall, upright cases. All of the alcoves open into a passage-way along the side of the room, leaving three sides for the display of specimens. Each alcove is about 20 x 30 feet, and in the center of each is a long horizontal case, with drawers beneath, containing an exhibit of the land and fresh water shells of Germany, and the mollusca of the North and Mediterranean Seas. The latter are arranged longitudinally in a series, the one above the other. The conditions of the two seas being so different, the two collections form a very interesting comparison. The general collection is arranged in the upright cases in cardboard trays, above which the printed label is held by a small card holder. In the upper part of the cases are a series of enlarged drawings of the animals, radulæ, jaws, darts, etc. On top of the cases is a light iron framework, on which are hung excellent charts of the "Weichthiere," showing the anatomical features of the leading groups. Throughout the entire museum great emphasis is placed on geographical distribution. At the entrance to the rooms is a large chart of the world, each faunal region having a different color. Under each chart is a series of the labels used in the museum, the labels having a wide colored border to indicate the different faunæ. Small charts are also placed among the specimens, the areas inhabited by certain species being colored.

In the Zoological Garden at Amsterdam, are two museums of natural history. The one devoted to the fauna of the Netherlands contains a very good collection of the shells of Holland. The other occupies the second floor of a long building, extending each side

from a central hall. Around the walls of these two rooms are arranged the birds and mammals, while in the center in two longitudinal rows of table cases is a splendid collection of shells, a collection that any museum should be proud of. One can get an idea of the space occupied by the following figures: Each case was about $2\frac{1}{2}$ x 4 feet, and of these there were 144. In hastily going over this collection, certain families and genera were represented by magnificent specimens, and seemed almost complete, the most noticeable being the Pectinidæ, Veneridæ, Cardiidæ, Crassatellidæ, etc. Among the Volutidæ and Conidæ were many of the rarer species, while the Cypræa were graced by the presence of *C. princeps* and *C. guttata*. Very interesting in showing color variation was the very large suite of *Nanina citrina*. But my time was too limited to do justice to these grand collections, and, at the time of my visit, the curators were either on vacation or absent for the day. Our readers will therefore please pardon the incompleteness of these brief descriptions.

INFLUENCE OF ENVIRONMENT UPON THE FORM AND COLOR OF
HELIX ALTERNATA.

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The *Helix alternata* is one of the most abundant of the larger forms of New England land shells, and, in its distribution, it extends over nearly the whole of the United States. Yet, owing to its habits, it is not as familiar as many of the more rare species. It is seldom, if ever, seen crawling upon the ground, after the fashion of other so-called snails, but nearly, or quite, always found snugly hidden in some old log or stump, or piece of rotten wood, which, by the way, forms its food.

It is extremely nocturnal in its habits, feeding during the night and never stirring during the day time, unless disturbed, in which case it will crawl to the nearest place of concealment and resume its slumbers. It never ventures from its home except during the breeding season, and hence, when one is found, others may generally be found near by. In color the *H. alternata* is one of the most beautiful shells, being striped by alternate bands of light and dark of different shades, from which fact the common name of "tiger-snail" has been given to it.